

CLAIMS

1. A method for processing of multi-component liquid mixtures through vacuum distillation comprising pressurized feeding of hydrocarbon liquid mixture to an ejector nozzle with its further discharging to a vacuum chamber, *wherein* the raw liquid mixture is fed to the ejector nozzle under pressure of 1 to 12 MPa, due to boiling up of a part of said liquid mixture a two-phase supersonic flow is formed in the vacuum chamber, after which a counterpressure is generated providing for emergence of a pressure surge in an ejector vacuum chamber with avalanche condensation therein of a gaseous component of the two-phase flow.
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- 10 2. A plant for multi-component liquid mixtures processing comprising a feeding pump, a head delivery main, a discharge main, control instrumentation and an evacuator comprising a horizontal vacuum chamber, *wherein* the evacuator is embodied as a hydraulic/gas ejector connected to the head main, the nozzle of which is integrated into the front end wall of the vacuum chamber, the latter having the length with respect to its cavity diameter meeting the equation
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$$L = (7 \text{ to } 10) * D, \text{ where:}$$

- 20 L is the length of the vacuum chamber,
 D is the diameter of the vacuum chamber cavity;
besides, the plant further comprises the counterpressure regulator embodied so as to provide for, jointly with the hydraulic/gas ejector, formation of the pressure surge in the vacuum chamber and connected through a pipeline to the
25 rear end wall of the vacuum chamber, and a vacuum pressure gauge connected to the vacuum chamber in the latter's front section.

3. The plant according to the Claim 2, *wherein* the nozzle is embodied with its thickness with respect to its diameter constituting

$$\frac{l_c}{d_c} = 1 \text{ to } 5, \text{ where:}$$

l_c is the nozzle thickness,

5 d_c is the nozzle diameter.

4. The plant according to any of the Claims 2 or 3, *wherein* additionally connected to the head delivery main between the feeding pump and the exhaust ejector are a flowmeter, a thermometer, and a pressure gauge.